

Abstract

A giant magnetoresistive memory device includes a magnetic sense layer, a magnetic storage layer, a non-magnetic spacer layer between the magnetic sense layer and the magnetic storage layer, and an antiferromagnetic layer formed in proximity to the magnetic storage layer. 5 The antiferromagnetic layer couples magnetically in a controlled manner to the magnetic storage layer such that the magnetic storage layer has uniform and/or directional magnetization. Additionally or alternatively, an antiferromagnetic layer may be formed in proximity to the magnetic sense layer. 10 The antiferromagnetic layer in proximity to the magnetic sense layer couples magnetically in a controlled manner to the magnetic sense layer such that the magnetic sense layer has uniform and/or directional magnetization. 15